

I. Chemical Fertilizer

A. Production and Imports

Estimates of chemical fertilizer production, imports, and supply for Communist China in the years 1957-66 are shown in Table 1. These estimates indicate approximately the availability of chemical fertilizer in Communist China since 1957, although the estimates for earlier years are more reliable than for later years. The figures for 1957 and 1958 are as reported by the Chinese and they are consistent with information from a number of sources on the size, type, and location of fertilizer plants. The figures for 1959-64 are based mainly on annual percentage increases in production announced by the Chinese. We consider these estimates to be reasonably accurate but less reliable than those for 1957-58. The Chinese did not release usable information on the total production of fertilizer in 1965 and 1966. Our estimates of production for those years were derived largely by aggregating the estimated output of individual plants.

Table 1 shows an increase in production of about 1 million tons in 1965, although China claimed that production increased "more than 3 million tons" compared with 1964. However, the Chinese changed their method of reporting fertilizer production in 1965. Instead of reporting in terms of standard fertilizer units,* they included the full weight of low grade and relatively heavy fertilizers such as ground phosphate rock and ammonium bicarbonate. The figures in the table for 1965 and 1966 reflect adjustments to eliminate the extra weight of non-standard fertilizers and to make the figures for these years comparable to the figures for earlier years.

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* The Chinese normally report fertilizer production in terms of product containing 20% nitrogen (N), 18.7% phosphoric acid (P_2O_5), and 40% potassium oxide (K_2O).

The chemical fertilizer industry appears to have retained its high priority among the civilian industries in China. Although there is some evidence that investment in new fertilizer plants may decline in 1967, there is no indication that the fertilizer industry has been seriously affected by the cultural revolution. Production of chemical fertilizers in 1967 probably will not increase as much as in 1965 and 1966, but this reflects a decline in the construction of large plants rather any significant disruptions in the supply of materials and other problems generated by the cultural revolution.

The estimates of fertilizer imports are based primarily on trade statistics published by China's major suppliers -- Japan and the countries of Western Europe. The import figures are believed to be more reliable than those for Chinese production.

B. Distribution

We believe the Chinese have a systematic method of allocating chemical fertilizer to geographic areas and to specific crops, but we have no clear details on the operation of this system. The Chinese say that they give priority to areas with the best irrigation and flood control facilities. They apparently give most of the fertilizer to areas producing grain and cotton (for example, at least 60% in 1963). Within provinces, there appears to be direct control over distribution of fertilizer. For example, the provincial authorities gave Chungshan Hsien, the major rice-producing hsien in Kwangtung, priority over all other hsien in the province for the purchase of chemical fertilizer in 1964-66. The administrative cadres in hsien, communes, and brigades allocate fertilizer to specific production teams. There is evidence that individual teams have the option to buy or decline to buy the fertilizer allocated to them. If a team chooses to purchase none or only part of its quota and the subsequent harvest is bad, the team is subject to "criticism." Loans usually are available to the teams for purchase of fertilizer, tools, and other inputs.

There is no indication that price plays an important direct role in the distribution of fertilizer at any level. However, it does have a rationing effect, since the productive teams are more able to purchase their full quotas at the going price than the less productive teams. We have no information about possible unsold fertilizer that may arise because some teams decline to purchase their full quotas, but it is possible that extra supplies are made available to other teams willing and able to pay the cost.

Table 1

Communist China: Estimated Production, Imports, and Supply of
Chemical Fertilizer a/ 1957-66

(Thousand Metric Tons)

Year	Supply b/				Production c/				Imports d/			
	Total	Nitrogen	Phosphorous	Potassium	Total	Nitrogen	Phosphorous	Potassium	Total	Nitrogen	Phosphorous	Potassium
1957	1,930(430)	1,640(370)	270(50)	20(10)	803(159)	683(137)	120(22)	0(0)	1,130(270)	960(230)	150(30)	20(0)
1958	2,970(625)	2,580(550)	390(75)	neg(neg)	1,354(266)	1,010(202)	344(64)	neg(neg)	1,620(360)	1,570(350)	50(10)	0(0)
1959	3,080(650)	2,530(540)	510(95)	40(15)	1,900(380)	1,360(270)	500(94)	40(16)	1,180(270)	1,170(270)	10(neg)	0(0)
1960	3,490(715)	2,650(550)	820(155)	20(10)	2,500(500)	1,680(340)	800(150)	20(8)	990(215)	970(210)	20(5)	0(0)
1961	2,440(500)	2,035(425)	400(75)	5(neg)	1,400(280)	995(200)	400(75)	5(2)	1,040(225)	1,040(225)	neg(neg)	0(0)
1962	3,140(650)	2,540(540)	600(110)	neg(neg)	2,100(410)	1,500(300)	600(110)	neg(neg)	1,040(240)	1,040(240)	0(0)	0(0)
1963	4,860(1,110)	3,960(940)	900(170)	neg(neg)	2,900(570)	2,000(400)	900(170)	neg(neg)	1,960(540)	1,960(540)	neg(neg)	0(0)
1964	4,710(1,040)	3,330(780)	1,380(260)	neg(neg)	3,500(680)	2,300(460)	1,200(220)	neg(neg)	1,210(360)	1,030(320)	180(40)	neg(neg)
1965	6,780(1,530)	5,100(1,200)	1,680(330)	neg(neg)	4,500(880)	3,000(600)	1,500(280)	neg(neg)	2,280(645)	2,100(595)	180(50)	neg(neg)
1966	8,450(1,910)	6,650(1,560)	1,800(350)	neg(neg)	5,500(1,080)	3,700(740)	1,800(340)	neg(neg)	2,950(830)	2,950(820)	(10)	neg(neg)

a. Figures in parentheses are for actual plant nutrient content, i.e. nitrogen, phosphorous, etc.

b. Because of rounding, production and imports may not add to the totals shown for supply.

c. Production figures are in metric tons of product weight containing 20 percent nitrogen (N), 18.7 percent phosphoric acid (P₂O₅), and 40 percent potassium oxide (K₂O) respectively.

d. Import figures are expressed in metric tons of product weight containing varying amounts of nutrients, but of an average nutrient content close that for production in China.

II. Rural and Urban Food Consumption

Since 1958 the urban areas of China have consistently received higher grain rations than the rural areas. [] This has been possible because the government distributes imported grain only to urban areas and procures large amounts of grain from the countryside through heavy taxation and compulsory purchases. Not only are the food rations in urban areas higher than in rural areas, but large cities such as Peking, Shanghai, Tientsin, Wuhan, and Canton receive larger rations than smaller cities.

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Chinese regulations on rural taxation and compulsory purchase of grain are designed to assure that the urban areas receive sufficient grain. In order to discourage the falsification of grain statistics by farmers and to avoid haggling with peasants over the amount of grain actually produced each year, the government uses as a tax base the "crop yield in a normal year" rather than the actual production each year. Cadres in local areas compute a standard yield in relation to the normal output of the land in their areas, giving consideration to the natural capacity of the soil, the extent of irrigation, and the use of fertilizers, and assuming normal methods of cultivation. Once determined, this standard yield may remain unchanged for several years.

The tax rates applied vary considerably in different areas but may not exceed 25%. In addition, local surtaxes are levied in most areas. About 90% of the agricultural tax is paid in farm produce, primarily grain, and is collected at harvest time. In some individual cases, the standard yield has been established at a level 15 to 20 percent higher than actual output. In addition to taxes, the government also requires production teams to sell a specified amount of their grain to the state at low prices. This combination of taxes and compulsory purchases operates as an effective squeeze on the peasants' supplies of grain.

The amount of grain available for consumption in rural areas depends primarily on the size of the local harvest as well as on the differential impact of taxes and compulsory sales. After deductions are made from the output of each production team for government taxes, compulsory sales, seed reserves, fertilizer purchases, and other uses, the remaining grain is distributed to peasants on the basis of grade of worker, age, and number of workpoints accumulated. Because of differences in land fertility, water resources, and similar factors, harvests may vary substantially among teams within the same commune, as well as between hsiens and provinces.

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III. Private Plots

Private plots are used by peasants largely to produce vegetables and tubers and to raise poultry and pigs. The production of grain on private plots is forbidden. The plots vary in size from .001 to .16 hectare per person (about 110 to 17,000 sq. feet) and average about .013 hectare per person (about 1,400 sq. feet). The average size of rural families in China is not known, but 4.5 is a reasonable estimate. On this basis, private plots would average .059 hectare per family (about 6,300 sq. feet). Slightly larger plots are allocated to peasants who raise livestock. Since 1961 private plots have accounted for about 7 percent of the cultivated area in South China and about 4 percent in North China. They are permitted in all the cultivated areas of China.

The fertilizers used on private plots are principally nightsoil and pig manure; the use of chemical fertilizer is not permitted. In recent years some communes have prohibited the use of pig manure on private plots because of a general shortage of fertilizer in the collective sector. Shortage of fertilizer was one of the reasons given for abolishing some plots and reducing the size of others in 1966.

Despite their small size, the private plots have made a substantial contribution to the diet since 1960. They have helped to improve the quality of the diet by supplying more nutritious foods such as vegetables and meat, and they have provided a large share of the daily caloric intake from non-grain foods. The peasants consume some of the produce from their plots and sell the remainder on local free markets.

There are indications that the peasants have sometimes neglected collective farming for their private plots. [redacted] farmers are told they spend too much time on private plots and neglect the collectives. [redacted]

[redacted] We have no specific information on the division of time between private and collective farming. In at least some areas the Army is now making certain that farmers spend most of their time on the collective fields, but they also assure that time is available for private plots. For example, in Shihchi, Kwangtung, where spring planting is under the supervision of the Peoples Liberation Army, officers move the farmers to the collective fields in military formation each morning. After the day's work is completed, usually about 4 p.m., the officers march the farmers back to their villages. They are then free to work on their private plots.

The cultural revolution has adversely affected private farming in a few areas, but there is no evidence that these disruptions are widespread.

The abolition of private pig raising by local authorities in some areas has been criticized in the official press. A 14 March editorial from Canton stresses the importance the government attaches to private pig raising and declares that "our party's policy on pig breeding has not changed. The party Central Committee's principle on pig breeding -- 'simultaneous collective and private breeding with private breeding as the main thing' -- must be implemented. It is very wrong to regard peasants' pig-breeding as 'selfish and destroy it like destroying self'. We must not be careless."

There have been reports in the US press that during the confusion of the cultural revolution, peasants have taken action to divide communal land among themselves and to distribute the commune's tools, livestock, fertilizer, and other farming supplies. We have no confirmation of these reports. If attempts have been made to seize and distribute collective property, they were probably very infrequent and almost certainly not successful.